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**UNU-EHS**

Institute for Environment  
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## DISASTER RISK AND READINESS FOR INSURANCE SOLUTIONS

InsuRisk Assessment Report 2018

# CONTEXT

In 2017, the InsuResilience Secretariat commissioned the United Nations University's Institute for Environment and Human Security (UNU-EHS) and Social Impact Partners to develop a concept and methodology that provide transparent and comparable information on countries' vulnerability towards climate and disaster risks and their readiness to accommodate insurance solutions. Such information is supposed to provide orientation for the prioritization of action within the InsuResilience Global Partnership and tailor support for potential partner countries. The method has been designed with a view to the goals of the InsuResilience Global Partnership, i.e. to strengthen the resilience of developing countries and to protect the lives and livelihoods of poor and vulnerable people from the impacts of disasters through the use of climate and disaster risk finance and insurance solutions. This will be achieved by developing a global multi-stakeholder community of countries, experts and practitioners working on financial protection. For further information on the InsuResilience Global Partnership please have a look at [www.insuresilience.org](http://www.insuresilience.org).

The resulting "Risk and Readiness for Insurance Solutions Assessment Tool" (InsuRisk Assessment Tool) assesses the climate and disaster risk of partner countries as well as their readiness to accommodate risk insurance and other risk transfer solutions. In line with the pro-poor focus of InsuResilience, the analysis has been focused on low and lower-middle income countries ( $n = 84$ ). The tool's modular design allows governments, insurers, implementing partners and researchers to select and combine required information based on their respective needs. A first prototype was released at COP23 in November 2017 in Bonn, Germany. An updated version is presented in this factsheet.



## CONCEPT AND METHODOLOGY

*The InsuRisk Tool is designed to provide answers to the following key questions:*

- What is the level of vulnerability and climate and disaster risk of a country?
- What is the short-term capacity of a country to cope with hazardous events?
- How high is the remaining residual risk?
- Which long-term preventive strategies exist in a country to tackle future disaster risk?
- What is a country's readiness to accommodate insurance and other risk transfer solutions?

In order to provide answers to these questions, the InsuRisk Assessment Tool comprises five key components, displayed in *Figure 1*: (1) climate and disaster risk, (2) short-term coping capacity, (3) residual risk, (4) long-term prevention strategies, and (5) readiness for insurance solutions. Following the definition of the Intergovernmental Panel on Climate Change (IPCC 2014<sup>1</sup>), disaster and climate risk emerges where hazardous events or processes (here: climate-related and other natural



1 IPCC (2014). *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.* Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1132 pp.

hazards) meet with exposed and vulnerable elements (here: people, agricultural land/economic production, and infrastructure) Coping capacity refers to the capacity of individuals, institutions and governments to cope with hazardous events. It hence presents the short-term capacity to reduce disaster risk to a certain level of residual

risk. In contrast, the availability (or lack of) preventive strategies, such as disaster risk reduction (DRR) strategies, preparedness plans or National Adaptation Plans (NAPs) does not immediately influence disaster risk or residual risk today, but rather reflects a country's capacity and will to manage potential risk in the longer-term future.

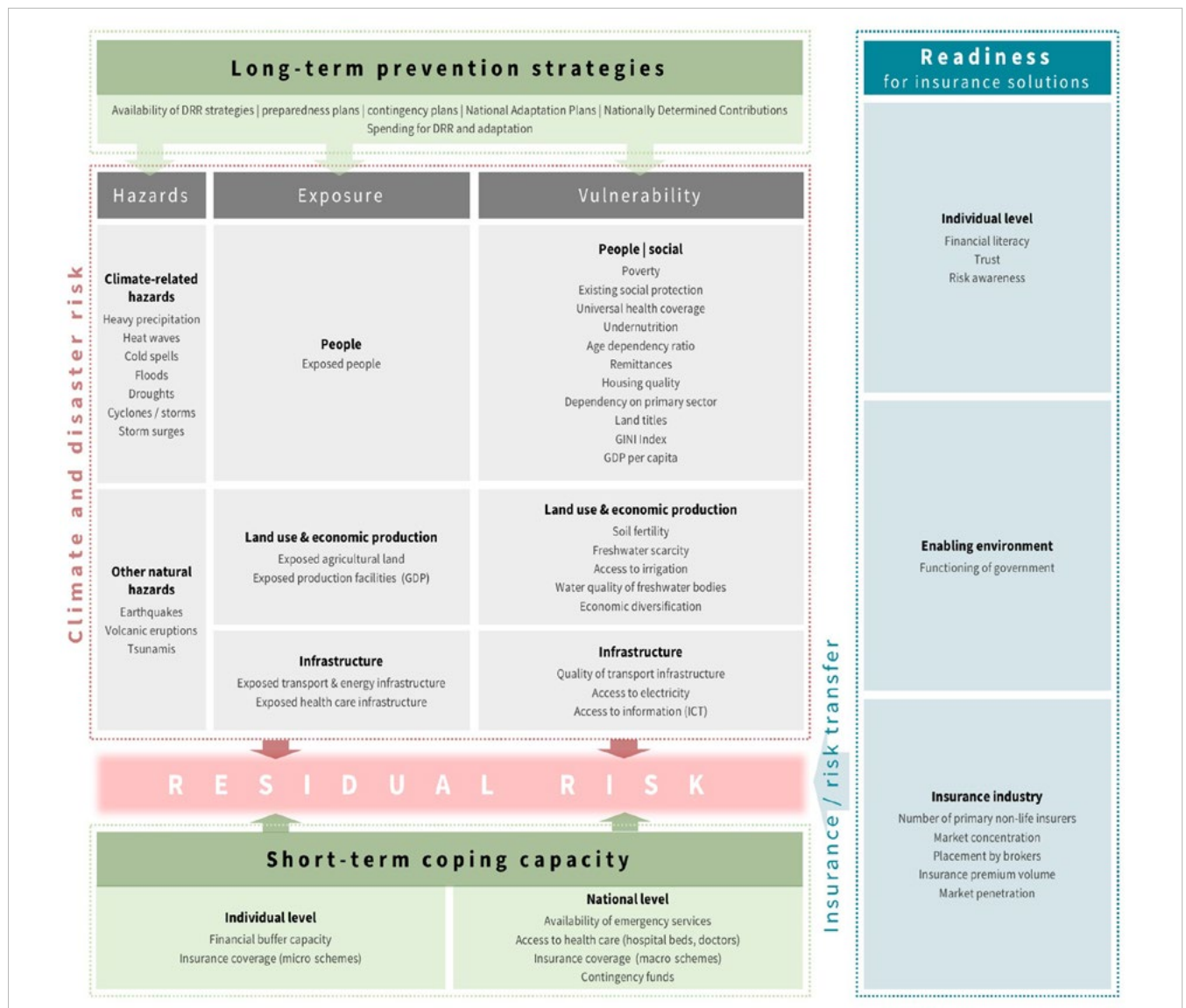


Fig. 1: Conceptual framework of the InsuRisk Assessment tool. The tool consists of five key components: (1) climate and disaster risk, (2) short-term coping capacity, (3) residual risk, (4) long-term prevention strategies, and (5) readiness for insurance solutions.

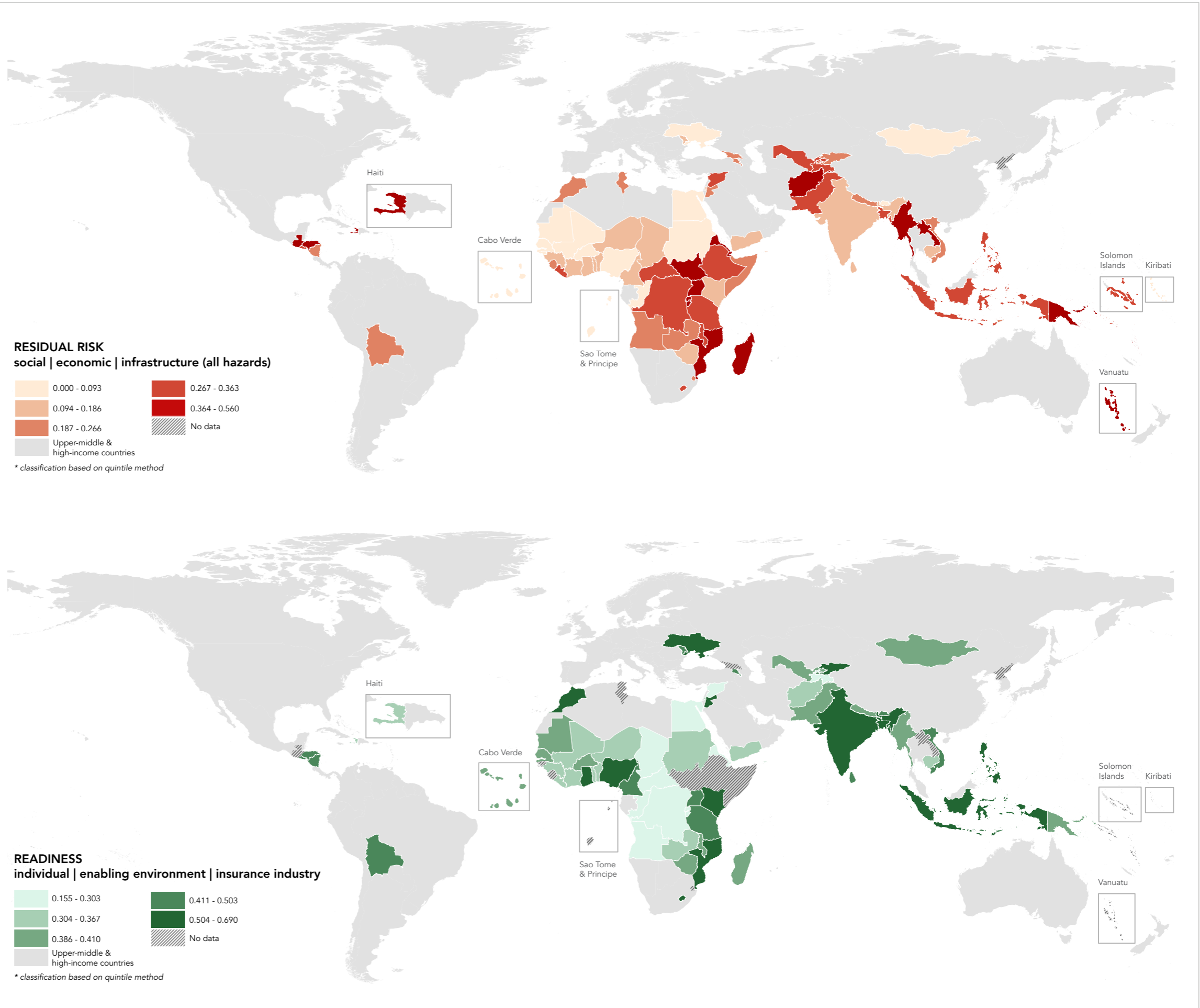
One key innovation of the InsuRisk Assessment Tool in comparison to other risk assessment tools is the systematic consideration of a country's readiness to accommodate insurance and other risk transfer solutions. The overall readiness of a country consists of three modules: (1) individual readiness, (2) the enabling political environment to attract the insurance industry, and (3) the current development status of a country's insurance market.

As indicated in the conceptual framework (Fig. 1), each of these five components is represented by key factors (e.g. poverty, social protection, universal health coverage, etc. for social vulnerability) for which a set of underlying indicators and datasets is considered in the assessment.

The InsuRisk Assessment Tool builds on a modular design, where different indicators are aggregated into their respective modules (e.g. short-term coping capacity) and submodules (e.g. individual level vs. national level) for each of the 84 target countries considered. The results of this assessment are index scores for each module and submodule. These scores range between zero (low) and one (very high). A detailed description of the indicators, data sources, and key methodological steps can be found online (see Imprint).

# 2018 UPDATE

In preparation for COP24 in Katowice, Poland, the initial prototype was updated using the most recent high-quality data. Overall, data for 32 out of the total 53 indicators (60%) was updated based on newly available data. Due to enhanced data availability, the 2018 version now also covers Cabo Verde and Kiribati – two countries that were not included in the 2017 version. In consequence, the number of target countries (i.e. low and lower-middle income countries) with ‘no data’ has been reduced from five to three (Micronesia, the Democratic People’s Republic of Korea, and Kosovo). Further, the methodology for index construction was also slightly updated. The 2017 version of the tool used minimum and maximum indicator scores in the normalization process, resulting in relative indicator and index scores for these 84 countries. For the 2018 version, global minimum and maximum values were used for each indicator, thus allowing for changes in the selection of target countries in the future while ensuring that the index scores of the individual countries do not change. This approach facilitates timeline comparisons in the future, in support of tracking countries’ progress towards risk reduction and their improvements in the readiness to accommodate risk transfer solutions. Further details on the above mentioned updates are provided in the supplementary online material (see Imprint).



# RESULTS

Figure 2 juxtaposes the residual risk of a country (Fig. 2, upper panel) with its readiness to accommodate insurance and other risk transfer solutions (Fig. 2, lower panel). The index scores of these two components of the InsuRisk Assessment Tool are divided into five groups of countries of equal size (quintile method). Lighter colors represent lower index scores, while darker colors indicate higher index scores for both components respectively. The figure shows that countries with a particularly high level of

Fig. 2: Residual risk (upper panel) vs. readiness for insurance solutions (lower panel). Residual risk considers all hazards, the vulnerability of people, land use/ economic production, and infrastructure combined, as well as a country’s coping capacity, while readiness for insurance solutions results from the combination of individual readiness, enabling environment, and the current development status of a country’s insurance market.

residual risk include Djibouti, Burundi, Vanuatu, Afghanistan, Madagascar, Rwanda, Papua New Guinea, Haiti, South Sudan, Honduras, Uganda, Eritrea, Guatemala, Mozambique and Lao PDR. Countries with highest readiness to accommodate insurance and other risk transfer solutions include India, Indonesia, Ukraine, the Philippines, Morocco, Ghana, Jordan, Mozambique, Nigeria, Kenya, Lesotho, Kyrgyzstan and Bangladesh. Countries with the strongest gaps in readiness include Djibouti, Chad, Eritrea, the Central African Republic, Syria, Rwanda, Burundi, the Comoros, Angola, the Democratic Republic of the Congo, Egypt, the Gambia, Tajikistan, and the Congo.

Figure 3 shows exposure (Fig. 3, upper panel) and vulnerability (Fig. 3, lower panel) as two key components of risk. Countries with the highest exposure include Vanuatu, Myanmar, the Philippines, Guatemala, Haiti, Honduras, Tajikistan, Madagascar, Djibouti, Afghanistan, El Salvador, Georgia, Nicaragua, Kyrgyzstan, Armenia, Papua New Guinea and Lao PDR. Countries with the highest vulnerability are all located on the African continent and include South Sudan, Chad, Malawi, the Central African Republic, Madagascar, Burundi, Mozambique, Eritrea, Somalia, the Democratic Republic of the Congo, Niger, Uganda, Ethiopia, Angola and Guinea-Bissau.

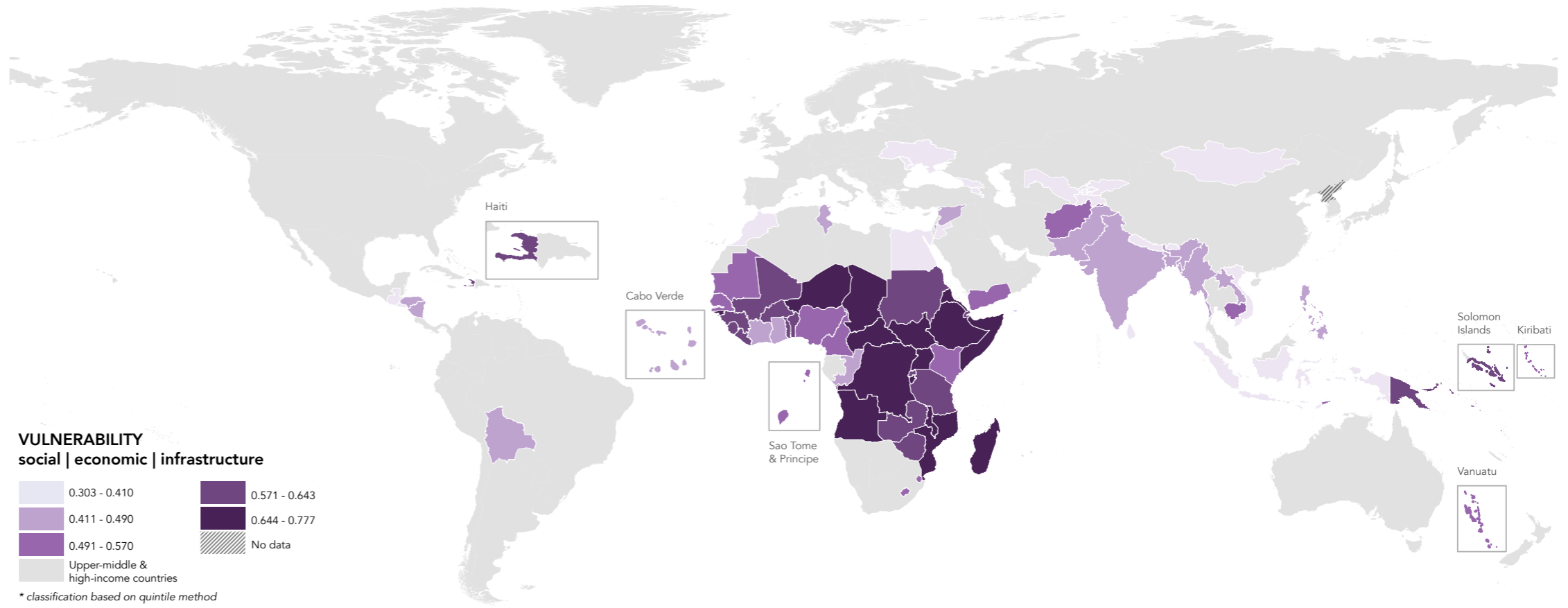
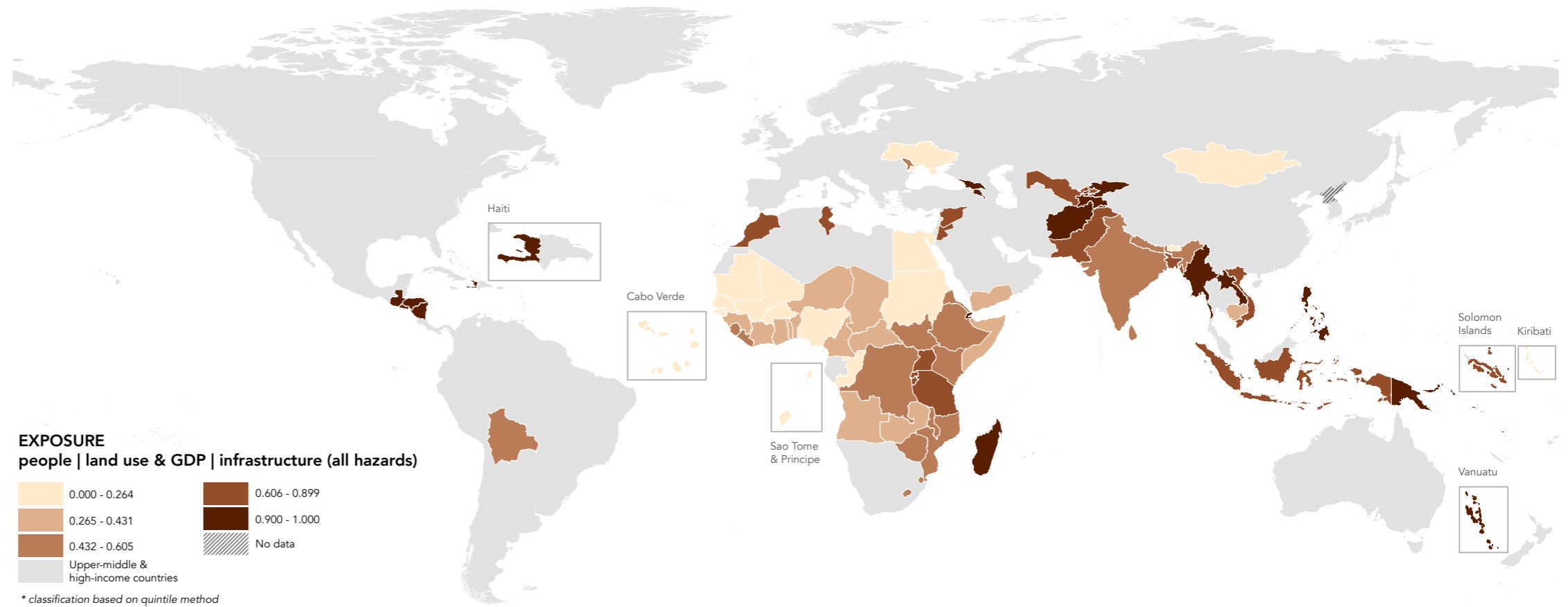


Fig. 3: Exposure (upper panel) vs. vulnerability (lower panel).

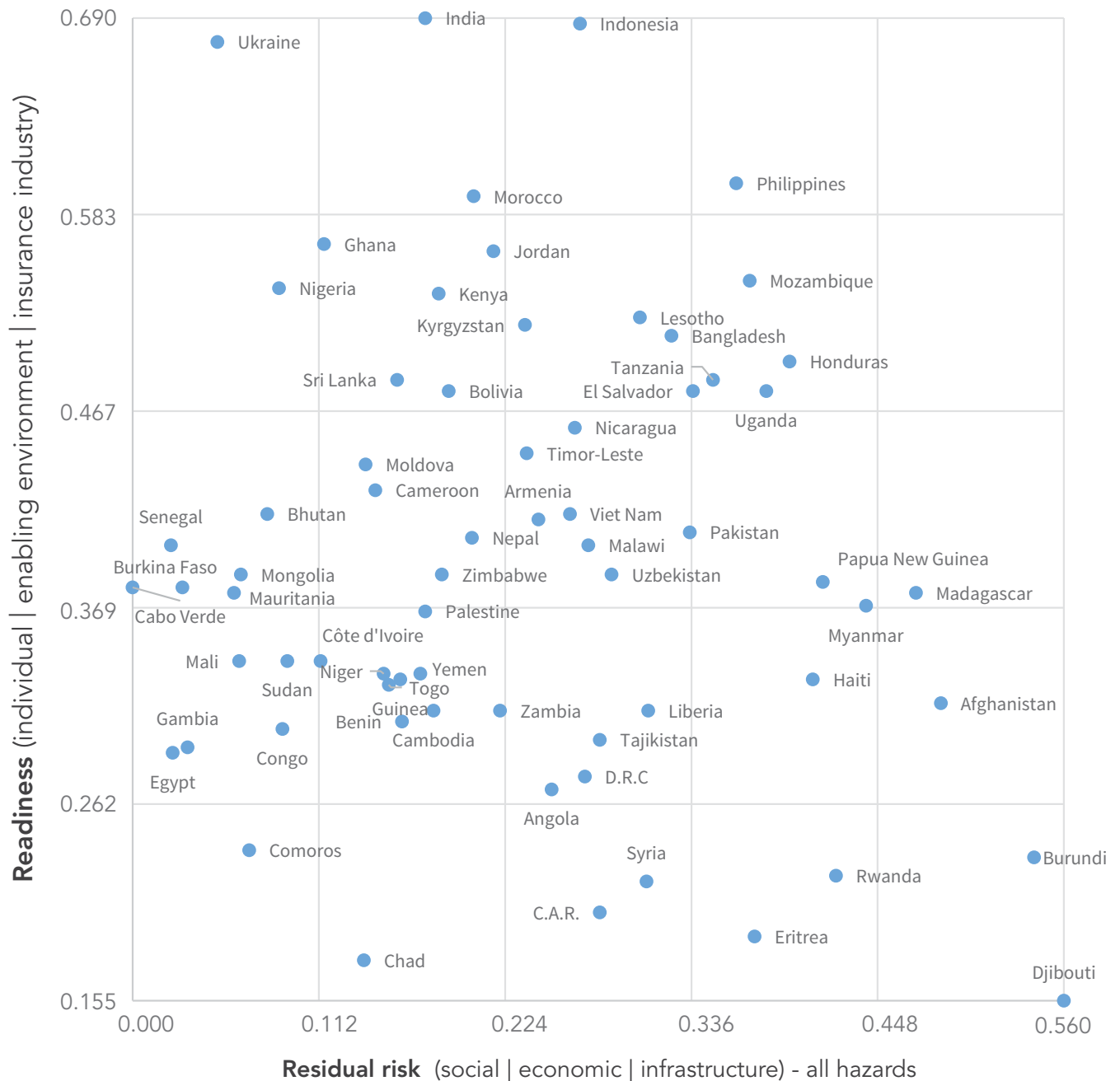


Fig. 4: Country profiles contrasting residual risk and hence demand for innovative risk transfer solutions and overall readiness for insurance solutions.

With regards to InsuResilience’s focus on providing insurance solutions to those most at risk, *Figure 4* plots a country’s residual risk against its readiness for insurance solutions (i.e. the combination of individual readiness, enabling environment and the current state of insurance). Such analysis allows for developing country profiles and tailoring support according to the specific situation of a country. *Figure 4*, for example, allows to identify those countries where a very high residual risk concurs with a particularly grave lack of readiness to accommodate risk transfer solutions (e.g. Djibouti, Burundi, Eritrea and

Rwanda). At the same time, countries can be identified in which high residual risk concurs with a comparatively high readiness for insurance solutions (e.g. the Philippines, Mozambique or Indonesia).

In addition to providing comparative information on the target countries’ residual risk and readiness for risk transfer solutions on a global scale, more detailed country profiles have been developed which offer more detailed information on individual countries. *Figure 5* shows an example of such a country profile (here: Sri Lanka).

# Sri Lanka

Country profile for disaster risk and readiness for insurance solutions

## Country overview

### Population (2018)

20,950,041<sup>1</sup>

### Annual rate of population change (2010-2015)

+0.50%<sup>1</sup>

### World Bank income classification

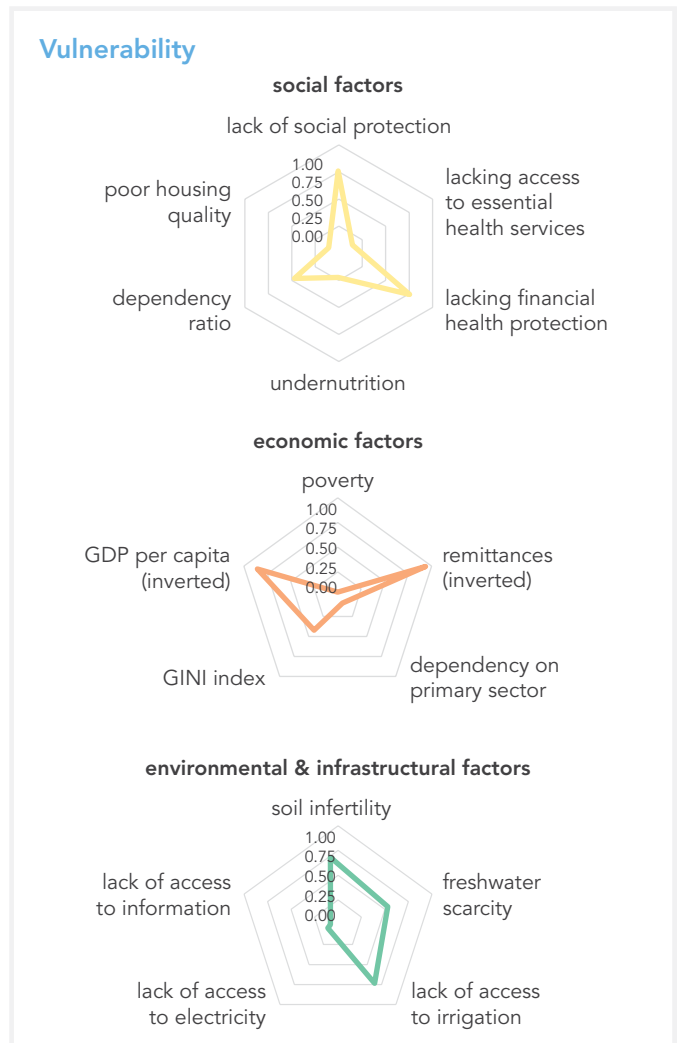
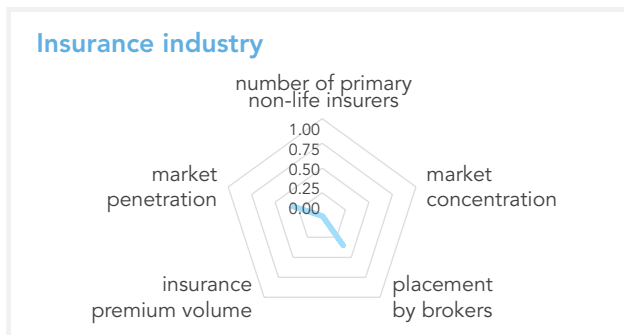
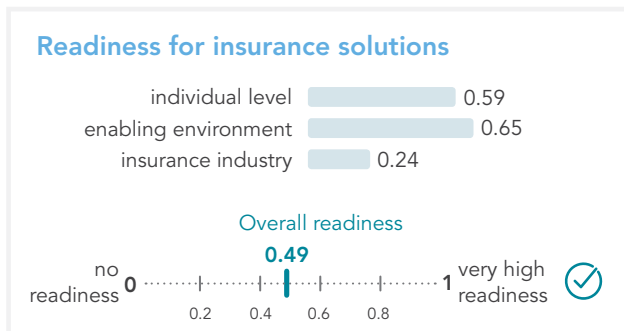
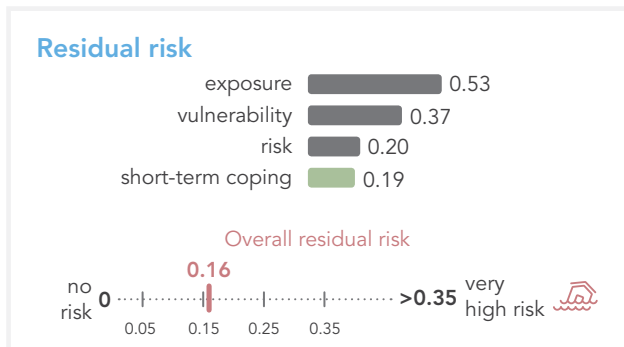
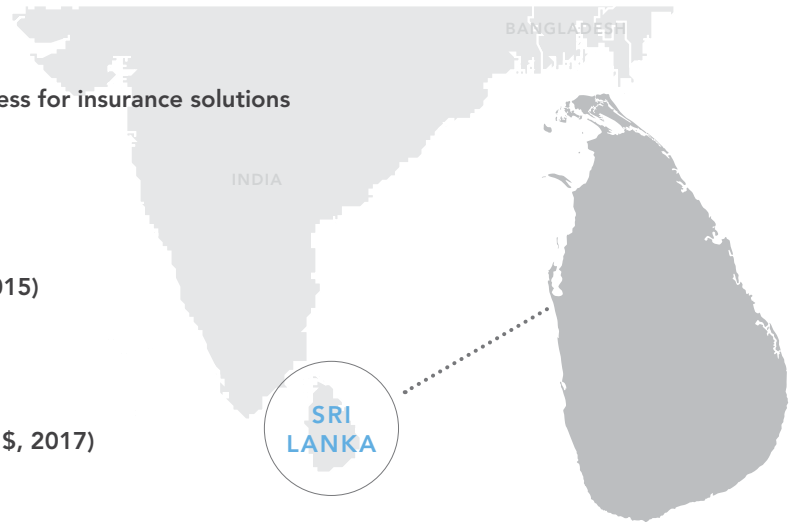
Lower middle income<sup>2</sup>

### GDP per capita, ppp (current international \$, 2017)

\$12,811<sup>3</sup>

### GDP per capita growth (% annual, 2017)

+2.0%<sup>3</sup>



<sup>1</sup> UN-DESA, World Population Prospects 2017 (<https://population.un.org/wpp/>).  
<sup>2</sup> WorldBank, Country and Lending Groups (<https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>).  
<sup>3</sup> WorldBank, Open Data (<https://data.worldbank.org>).

Fig. 5: Selected country profile (here: Sri Lanka) based on the updated InsuRisk Assessment Tool.

According to the 2018 version of the InsuRisk Assessment Tool, and based on a quintile classification of the results as shown in Figure 2, Sri Lanka is characterized by medium residual risk (0.16 on a scale from 0 to 0.56) and high readiness for insurance solutions (0.49 on a scale from 0 to 0.69).

The country has a high exposure to multiple hazards, notably floods, droughts and storm surges, and medium overall vulnerability. Low GDP per capita, lack of social and financial health protection as well as fresh water scarcity are key drivers of vulnerability.





# CONCLUSIONS AND OUTLOOK

Having presented and reviewed the InsuRisk Tool prototype and its indicative outcomes at COP23 in Bonn in 2017, an updated version has been developed taking into consideration inputs from InsuResilience partners and stakeholders as well as the most recent data. Governments and implementing partners can use the tool to get an overview of the risk and readiness situation both across countries and within a specific country. Drawing on its modular structure, the tool also provides information on relevant drivers of risk and readiness for insurance solutions, and hence can support partners in identifying targeted solutions to reduce disaster risk and enhance readiness. Insurers can use the tool to get an overview of the current development status of the insurance market in a country.

Future plans include the development of an interactive online tool, allowing for detailed and user-driven analysis of the different modules and submodules covered by the tool. Further, special reports focusing on hot topics related to InsuResilience are planned for the future, drawing on the analytical capabilities of the tool. As the InsuResilience Secretariat is currently setting up a monitoring and evaluation (M&E) system, the InsuRisk Assessment tool can also make a valuable contribution to the monitoring and impact evaluation of the efforts to reduce risk and implement risk transfer solutions in InsuResilience partner countries. By assessing changes in the tool's five key components and their underlying indicators on a regular basis (e.g. every three years) potential changes can be identified in a systematic manner.

# IMPRINT

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## Online:

A detailed description of the methodology (incl. indicators and data sources) is available at <http://collections.unu.edu/view/UNU:6672>



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